

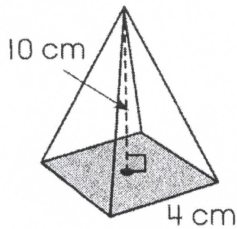
Name Answer Key

Geometry Unit 11 Worksheet #7 - Volume of Cones and pyramids

$$V = \frac{1}{3} B \cdot H$$

For #1-4, find the volume. For #4-6 you need to find the height first.

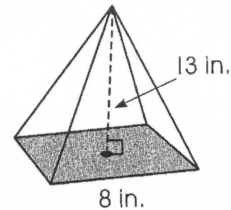
1.



$$\begin{aligned} V &= \frac{1}{3} B \cdot H \\ &= \frac{1}{3} 4 \cdot 4 \cdot 10 \\ &= \frac{1}{3} \cdot 16 \cdot 10 \\ &= \frac{160}{3} \end{aligned}$$

volume $53\frac{1}{3} \text{ cm}^3$

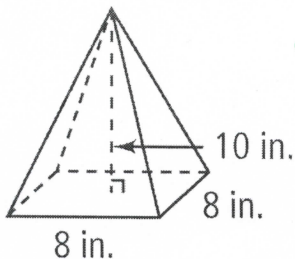
2.



$$\begin{aligned} V &= \frac{1}{3} B H \\ &= \frac{1}{3} \cdot 8 \cdot 8 \cdot 13 \\ &= \frac{832}{3} \end{aligned}$$

volume $277\frac{1}{3} \text{ in}^3$

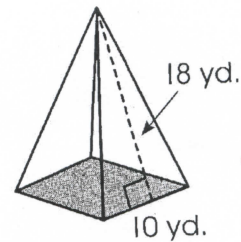
3.



$$\begin{aligned} V &= \frac{1}{3} B H \\ &= \frac{1}{3} \cdot 8 \cdot 8 \cdot 10 \\ &= \frac{640}{3} \\ &= 213\frac{1}{3} \text{ in}^3 \end{aligned}$$

volume $213\frac{1}{3} \text{ in}^3$

4.

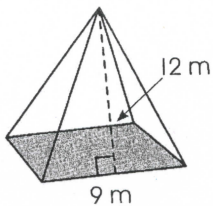
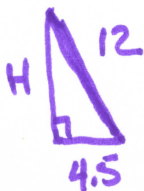


$$\begin{aligned} H^2 &= 18^2 - 5^2 \\ H^2 &= 299 \\ H &= 17.3 \end{aligned}$$

$$\begin{aligned} V &= \frac{1}{3} B H \\ &= \frac{1}{3} \cdot 10 \cdot 10 \cdot 17.3 \\ &= \frac{1730}{3} \end{aligned}$$

volume $576\frac{2}{3} \text{ yd}^3$

5.

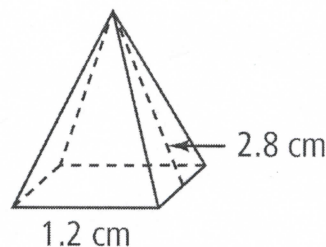
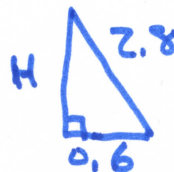


$$\begin{aligned} H^2 &= 12^2 - 4.5^2 \\ H^2 &= 123.75 \\ H &= 11.1 \end{aligned}$$

$$\begin{aligned} V &= \frac{1}{3} B H \\ &= \frac{1}{3} \cdot 9 \cdot 9 \cdot 11.1 \\ &= \frac{899.1}{3} \end{aligned}$$

volume 299.7 m^3

6.



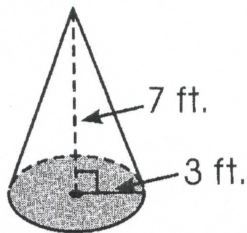
$$\begin{aligned} H^2 &= 2.8^2 - 0.6^2 \\ H^2 &= 7.48 \\ H &= 2.7 \end{aligned}$$

$$\begin{aligned} V &= \frac{1}{3} B H \\ &= \frac{1}{3} \cdot 1.2 \cdot 1.2 \cdot 2.7 \\ &= \frac{3.89}{3} \end{aligned}$$

volume 1.3 cm^3

For #7-9, leave in terms of π . Find the volume of the cone.

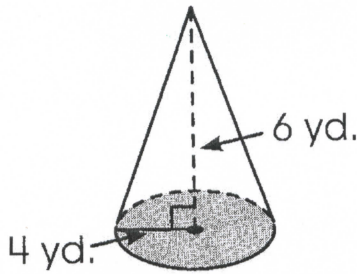
7.



$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi 3^2 \cdot 7 \\ &= \frac{63\pi}{3} \end{aligned}$$

volume $21\pi \text{ ft}^3$

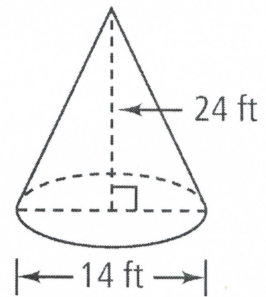
8.



$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi 4^2 \cdot 6 \\ &= \frac{96\pi}{3} \end{aligned}$$

volume $32\pi \text{ yd}^3$

9.

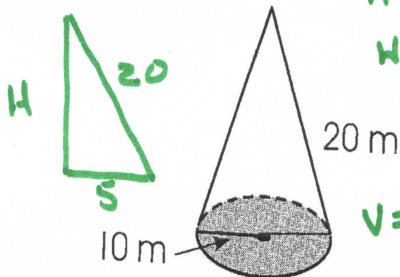


$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi 7^2 \cdot 24 \\ &= \frac{1176\pi}{3} \end{aligned}$$

volume $392\pi \text{ ft}^3$

For #10-12 find the height of the cone and the volume. Round to the hundredths place.

10.

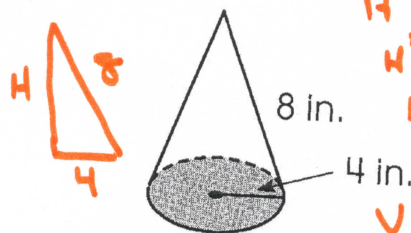


$$\begin{aligned} H^2 &= 20^2 - 5^2 \\ H^2 &= 375 \\ H &= 19.4 \end{aligned}$$

$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi 5^2 \cdot 19.4 \\ &= \frac{485\pi}{3} \end{aligned}$$

volume $161\frac{2}{3}\pi \text{ m}^3$
 507.63 m^3

11.

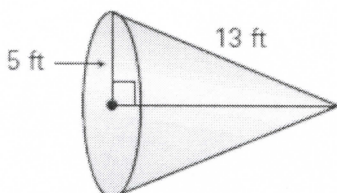


$$\begin{aligned} H^2 &= 8^2 - 4^2 \\ H^2 &= 48 \\ H &= 6.9 \end{aligned}$$

$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi 4^2 \cdot 6.9 \\ &= \frac{110.4\pi}{3} \end{aligned}$$

volume $36.8\pi \text{ in}^3$
 115.55 in^3

12.



$$\begin{aligned} H^2 &= 13^2 - 5^2 \\ H^2 &= 144 \\ H &= 12 \end{aligned}$$

$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi 5^2 \cdot 12 \\ &= \frac{300\pi}{3} \end{aligned}$$

volume $100\pi \text{ ft}^3$
 314 ft^3